

This section analyzed how our two neighborhoods compare to one another and to the regional baseline. It showed that while residents in Southern Village single-family homes own less automobiles per household, take less trips and auto trips, drive less distance and for less duration, and make fewer regional trips than northern Carrboro, these differences only hold for auto trips and trip distance at the person level.

## Estimation of Trip Generation Models

Typically, category analysis or regression models are used to predict trip frequency for a region or a major development. In this section, we estimate regression models that are intended to understand the factors that influence travel behavior and that can also be used for prediction purposes. Therefore, we restrict the model specifications to variables that can be forecasted. Also, category analysis can be subsumed into regressions, therefore we focus on analyzing the data using regression.

In order to compare the results of our trip generation model to a regional baseline, we first estimated a household-level trip generation model using the abbreviated TTA dataset with household size, number of vehicles, and income ranges as the independent variables (Table 4-12). This last set of variables is indicator variables. The most interesting result of this model is that, in general terms, households with higher incomes are associated with more trips per household.

A more complete trip generation model developed by Targa (2002) is attached as Appendix F. Targa's model takes into account census block level information such as race, density, and proportions of people commuting to work by various modes and is a better model for trip generation than a simple trip generation model when used at the regional level. However, Targa's model is not appropriate for our study at the household level since no comparable variables to those used in his model exist for our study.

With a baseline model in place, we then estimated trip generation models for each neighborhood. However, the income range variables that were significant at the regional level were not statistically significant for the neighborhood models and were therefore dropped from the neighborhood models. The insignificance of the income range variables at the household level may be due to the fact that there is not sufficient variation, given the high socioeconomic status of the respondents and also due to missing income data. Additionally, a linearity test between the dependent and independent variables showed that the relationship between the number of vehicles per household and number of trips was linear while the relationship between household size and the number of trips was not.

**Table 4-12: Trip generation model of the Triangle**

	Coeff.	T stat
Constant	2.262***	9.00
Size of Household	1.302***	15.76
Number of Vehicles	0.827***	7.75
Household Income		
\$20-30,000	-0.204	-0.70
\$30-40,000	0.323	1.06
\$40-50,000	0.890***	2.67
\$50-60,000	0.707**	2.23
\$60-80,000	1.036***	3.29
\$80-100,000	1.156***	2.93
\$100-150,000	1.347***	2.95
\$150-200,000	0.356	0.62
> \$200,000	3.267***	3.40
N	1731	
F statistic	63.48	
R-square	0.289	
Adjusted R-square	0.284	

Note: The mean, standard deviation, and range of the dependent variable (total trips) are 7.37, 4.31, and 25, respectively

\*\*\* Significant at the 99% confidence level

\*\* Significant at the 95% confidence level

\* Significant at the 90% confidence level